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Promoting Resilience in Self-Management (PRISM): Adverse Childhood Experiences and Impacts on Emotion Regulation

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Abstract

PRISM (Promoting Resilience in Self-Management) is a mindfulness-based intervention that aims to strengthen emotion regulation skills among individuals by employing cognitive behavioral therapy components. The purpose of the current study is to identify the relationship between adverse childhood experiences (ACEs) and depression, as well as to examine the changes in emotion regulation strategies of participants by comparing pre and post test data. The participants were voluntarily recruited from the Cornerstone Foundation, a homeless shelter, food pantry, and community center in Vernon, CT. The 13 participants completed PRISM through four weeks of two-hour workshop sessions in a small-group format. Results indicate a significant relationship between ACEs and depression ($r = .618$, $p < .01$). Results also indicate a significant reduction in mean ratings of Clinical Depression symptoms ($t = 2.887$, $p < .05$); further, 50% fewer met the clinical cut-off for moderate depression after participating in PRISM. Findings from the current study highlight the value of offering mental health support at places of vulnerable populations.

Introduction

Adverse Childhood Experiences

Adverse Childhood Experiences (ACEs) are events endured during childhood that can have lasting, negative effects. ACEs consist of multiple forms of abuse (physical, emotional, and sexual), neglect, bullying, the death of a parent, household dysfunction and other harmful experiences (Dube et al., 2003). In the original ACEs study, it was noted that a majority of individuals that had been exposed to one form of childhood abuse or household dysfunction were also exposed to at least one additional ACE (Felitti et al., 1998). The experience of at least four ACEs places individuals at a higher risk of negative physical and mental health outcomes than those with no ACEs (Hughes et al., 2017).

ACEs can interrupt emotional development processes and lead to deficits in the use of long-term emotion regulation strategies (Morris et al., 2007). This disruption can lead to a multitude of maladaptive coping strategies in an attempt to alleviate emotional distress (Espeleta, et al., 2018). Individuals with ACEs tend to have lower overall well-being and poorer self-regulation, as well as a higher risk of depression, substance abuse, and attempted suicide (Dube et al., 2003). This suggests that adverse childhood experiences can serve as an indicator for problems with drug use and mental health.

Increased levels of teacher-reported emotion regulation difficulties, problems with attention, conduct, and peers has been noted in children with ACEs (Narayan et al., 2017). ACEs and the consequential difficulties in emotion regulation are correlated with high rates of depression, anxiety disorders and overall distress (Chapman et al., 2004; Gratz et al., 2008; McElroy & Hevey, 2014; Su et al., 2015).

Greater health consequences are associated with experiences of childhood maltreatment and thus adhere to a greater cost of living. These healthcare costs have been seen to total an average over $200,000 across the lifespan; this includes an estimated $32,648 in additional childhood medical costs and another $10,530 in additional adult medical costs (Fang et al., 2012). However, the relationship between ACEs and health problems can be overlooked due to the delay between ACE(s) exposure and related subsequent health issues (Felitti et al., 1998).

Adverse Childhood Experiences in Vulnerable Populations

Overall, research suggests that vulnerable populations experience greater deleterious outcomes like victimization, incarceration, and worsened physical and mental health conditions than non-vulnerable populations; these health-related issues are often intensified due to a lack of adequate health care (Edalati et al., 2017; Waisel, 2013). Vulnerable populations include individuals that are racial or ethnic minorities, LGBTQ+, children, elderly, socioeconomically disadvantaged, immigrants, prisoners, underinsured, and those with specific medical conditions; these marginalized characteristics put individuals at an elevated risk of experiencing poor healthcare access and related outcomes (Waisel, 2013).

Economic hardship in childhood is significantly associated with food insecurity, maternal poverty, housing insecurity, and binge drinking (Braveman et al., 2018). Additionally, increased exposure to ACEs is associated with an increase in depressive symptomatology and higher likelihood of experiencing homelessness later in life (Chapman et al, 2004; Roos et al., 2013). Homeless populations with ACEs and severe mental illness typically see higher occurrences of further victimization and incarceration (McGuire & Rosenheck, 2004).

The criminal justice system is also impacted by ACEs. Results from a study conducted by Edalati et al. (2017) noted that childhood adversity had a significant relationship with criminal

justice involvement and victimization; however, this relationship did remain significant when controlling for posttraumatic stress disorder and substance dependence. It should also be noted that homeless populations with ACEs and severe mental illness are reported to experience higher occurrences of further victimization and incarceration (McGuire & Rosenheck, 2004). These findings suggest that while ACEs serves as a potential predictor for criminal justice involvement and victimization, mental health conditions may also play a strong role; this also echoes previous literature noting the significant relationship between mental health disorders and ACEs (Chapman et al, 2004; Roos et al., 2013; Waisel, 2013).

Per the U.S. Department of Housing and Urban Development (2011), families are the fastest growing segment of the homeless population. Research notes that higher rates of ACEs among homeless parents serve as a predictor for childhood maltreatment and family dysfunction intergenerationally (Narayan et al., 2017). This salience of intergenerational ACEs emphasizes the prevalence of negative parent-child relationships among housing insecure families in addition to other potential co-occurring risks like community violence, emotion regulation difficulties, and lack of resources (Narayan et al., 2017). Due to noted struggles with coping skills to regulate negative emotions, homeless individuals may engage in drug abuse, self-harm, and risky sex behaviors (Powell & Macguire, 2017).

ACEs, Emotion Regulation, & Mental Health

Emotion regulation can be described as the ability to recognize and accept emotions, as well as control behavioral responses to negative emotions (Gratz & Roemer, 2004). Research has suggested that parents play a critical role in organizing, explaining, and controlling the emotional scope of children (Thompson, 2008). Neglectful and/or abusive parents have a lower likelihood of teaching perspective-taking skills that are critical to empathy development or to provide

support in emotional awareness development (Shipman et al., 2005). ACEs, like caregiver mistreatment (i.e., physical abuse, verbal abuse, neglect), can thus inhibit one's capacity for emotion regulation (Kim & Cicchetti, 2010).

Issues with emotion regulation serves as a predictor for substance related and non-substance related addictions (Estévez et al., 2017). Among individuals with ACEs, emotion regulation has been noted as a significant mediator of physical and mental health issues (Cloitre et al., 2019). Vulnerable populations that have experienced ACEs may engage in health-risk behaviors such as alcohol abuse, illicit drug use, or risky sexual behaviors as an attempt to maintain a positive emotional state (Campbell et al., 2016; Cox & Klinger, 1988).

Emotion regulation skills have been noted to have significant correlations with higher levels of psychological adjustment (Stewart & Yuen, 2011). Cloitre et al. (2019) suggests that interventions focused on emotion regulation skills could treat psychological and physical problems. Since self-regulation of attention and the ability to take a non-judgmental perspective are characteristics of emotion regulation strategies as well as aspects of mindfulness, it is suggested these may be specific protective behaviors (Cavicchioli et al., 2019). Teaching healthy emotion regulation skills including mindfulness and distress tolerance through modes such as Dialectical Behavior Therapy (DBT) can be useful in addressing issues resulting from ACEs and are beneficial in reducing maladaptive coping behaviors (Espeleta et al., 2018).

Mindfulness, as well as distress tolerance, cognitive reframing, and attention shifting/distraction, are behavioral components of emotion regulation. Mindfulness can be defined as regulating one's attention to the present moment without casting judgement (Kabat-Zinn, 1994). There is a noted correlation between consistent mindfulness practice and increased character strengths of hope, bravery, curiosity, zest, love perspective, and gratitude; this thus

suggests that character strengths and mindfulness adhere to one's well-being (Pand & Ruch, 2019). Research notes mindfulness as a protective factor for difficulties with emotion regulation effect against the development of alcohol use disorder (Cavicchioli et al., 2019).

Mindfulness based interventions (MBIs) can teach mindfulness skills that increase individuals' self-regulation of emotions to decrease individuals' feelings of perceived distress (Russell, Hutchison, & Fusco, 2019). Mindfulness skills consist of bringing a conscious awareness to the present moment and pushing away distracting thoughts, as well as releasing negative judgements of one's experience (Kabat-Zinn, 1990); this emphasis on recognition and acceptance of emotions can thus be helpful in developing positive emotion regulation coping skills to use when faced with stressors (Bowen et al., 2014; Gratz & Roemer, 2004; Katz & Toner, 2012; Kreek & Koob, 1998; Sinha, 2012). Since vulnerable populations have a higher risk of experiencing deleterious outcomes, MBIs may provide more adaptive ways of coping with their circumstances (Bowen et al., 2014; Edalati et al., 2017; Katz & Toner, 2012; Kreek & Koob, 1998; Sinha, 2012; Waisel, 2013).

Current Study

The current study seeks to identify the relationship between ACEs and depression among a sample of 13 adult participants at the Cornerstone Foundation, a homeless shelter, food pantry, and community center. Further, the study seeks to improve the emotion regulation skills through the implementation of Promoting Resilience in Self-Management (PRISM; Russell et al., 2019) PRISM is a mindfulness-based intervention that aims to strengthen emotion regulation skills in individuals by employing cognitive behavioral therapy components. PRISM is a small-group format intervention that can be delivered through a series of one-hour group workshops or, for faster completion of the full eight-hour dose, in two-hour workshop sessions. Sessions emphasize

dialectical behavior therapy (DBT) elements with additional mindfulness and coping skill elements. The goal of each session is to help individuals learn and practice mindful strategies when faced with challenging emotions so that they do not rely on maladaptive coping strategies (e.g., substance abuse) as a solution to coping with emotional distress (Russell et al., 2019).

As summarized above, ACEs lead to maladaptive coping skills (Cloitre et al., 2019). ACEs also put vulnerable individuals at a higher risk for experiencing homelessness (Roos et al., 2013). A recent mindfulness-based intervention aimed at improving emotion regulation skills in adults with ACEs-based distress saw significant improvements in all facets of emotion regulation, psychological resilience, mental well-being, physical symptoms and illness, aspects of quality of life, and decreases in emotional suppression and rumination (Cameron et al., 2018). While literature has noted improvements in emotion regulation abilities and depressive symptoms among mindfulness-based intervention samples with ACEs, this evidence is limited, and is even scarcer within the housing insecure population (Cameron et al., 2018; Kimbrough at al., 2009; Maria et al., 2019).

PRISM was initially piloted in recovery high schools (RHS) of students with a diagnosis of substance use disorders (SUD) and a comparison school of students without a SUD diagnosis. This pilot was conducted across six one-hour, weekly sessions in a small group setting. While there were no significant differences between the PRISM and general coping skills intervention conditions, the study saw significant differences between groups, with the RHS group demonstrating significant improvements in impulsivity; this study also saw significant overall improvements in depressive symptomatology (Russell et al., 2019). In contrast with the pilot study, the current PRISM study is conducted across four two-hour, weekly sessions among a single sample of adult-aged individuals at a homeless shelter; this study also added the ACEs

measure as a key variable of interest. The results seen in the RHS study could differ from those in the current study of high-risk adults. Thus, the following questions are raised:

1. What is the relationship between ACEs and depression?
2. Does participation in the PRISM intervention lead to improved emotion regulation outcomes in this sample?

In line with these questions, it is hypothesized that 1) there will be a positive correlation between the number of ACEs and depressive symptoms; and, more specifically, that 2) the PRISM intervention will lead to improved depression symptoms and emotion regulation outcomes as measured by the Cognitive Emotion Regulation Questionnaire Short Form (CERQ-SF; Garnefski & Kraaij, 2006).

Methods

Research Setting

The study population consisted of a total of 13 participants who completed PRISM in 2 waves, with 8 individuals in the first group and 5 individuals in the second. Participants volunteered from the Cornerstone Foundation and received information sheets describing the study prior to data collection. In this study, PRISM was given in a small-group format over the course of four weekly two-hour workshop sessions. The data collection of measures was conducted before and after the implementation of PRISM.

Measures

As part of a larger set of measures, adverse childhood experiences were assessed using the Adverse Childhood Experiences (ACE) Questionnaire (Felitti et al., 1998), depression was assessed using the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977),

and emotion regulation was assessed using the Cognitive Emotion Regulation Questionnaire Short Form (CERQ-SF; Garnefski & Kraaij, 2006).

Adverse Childhood Experiences (ACE) Questionnaire. The Adverse Childhood Experiences Questionnaire (ACE; Felitti et al., 1998) is a 17-item self-report measure designed to assess negative experiences during the first 18 years of life. The scale includes 17 *Yes/No* items where *Yes*=1 and *No=0*, with scores ranging from 0-17. For this study, items are coded so that a higher score reflects a higher risk of health and social problems. Internal consistency for the measure in the current study is .92.

Center for Epidemiologic Studies Depression Scale (CES-D). The Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977) is a 20-item self-report measure designed to assess an individual's depressive symptomatology. Items are based on the feelings and behaviors of individuals within the last 7 days. Items are scored on a 4-point Likert scale, where 0 is *rarely or none of the time (< 1 day),* 2 is *some or a little of the time (1-2 days)*, 3 is *occasionally or a moderate amount of time (3-4 days),* and 4 is *most or all of the time (5-7 days)*, with scores ranging from 0-100. For this study, items are coded so that a higher score reflects higher depressive symptomatology and a lower score reflects lower depressive symptomatology. Scores above 16 indicate clinical depression and scores above 21 indicate severe depression. Internal consistency for the measure in the current study is .87.

Cognitive Emotion Regulation Questionnaire (CERQ) Short Form. The Cognitive Emotion Regulation Questionnaire Short Form (CERQ-SF; Garnefski & Kraaij, 2006) is an 18-item self-report measure designed to assess individuals' cognitive responses to distressing situations. Items are scored on a 5-point Likert scale, where 1 is *almost never,* 2 is *rarely,* 3 is *sometimes*, 4 is *often*, and 5 is *almost always*, with scores ranging from 18-90. This scale consists

of nine individual subscales representing the cognitive strategies of self-blame, acceptance, focus on thought/rumination, positive refocusing, positive reappraisal, putting into perspective, and catastrophizing. For this study, scores belonging to each individual subscale are summed (2-10); higher subscale scores indicate a greater use of a specific cognitive strategy in response to distressing situations. For example, a score of 10 on self-blame suggests that when presented with stressful life events, an individual almost always takes personal blame for its occurrence. Internal consistency of the individual subscales in the current study ranged from .36 to .96, with the lowest being putting into perspective ($\propto$ = .36); please note this Cronbach Alpha increased from .36 to .87 post-intervention. See Table 1 for the full list.

Results

Demographic Variables

Basic demographics of the overall sample (*N*=13) were collected. Of the 13 participants, seven (54%) were female, and participants' ages ranged from to 22-71 years of age (μ = 51.58, *SD* = 15.39). Of the 13 participants, ten (76.9%) identified as White/Caucasian, three (23%) identified as Black/African-American, and 11 (100%) identified as Non-Hispanic. All individuals in this sample had access to healthcare. Of the total sample, ten (77%) individuals experienced food insecurity within the past 12 months and 11 (85%) individuals experienced housing insecurity within the past 12 months. Participant demographic variables are presented in Table 1.

Key Variable Means and *SD*

Means and standard deviations from the sample at baseline are detailed in Table 1. The Adverse Childhood Experiences Questionnaire (ACE; Felitti et al., 1998) was measured to assess

the number of negative childhood experiences of the participants, with an overall mean of 7.9 (*N* = 13; *SD* = 5.3: range from 0-17). Participants with a score of four or higher have a higher likelihood of experiencing negative physical and mental health outcomes (Hughes et al., 2017). Based on this cut-off benchmark, 83% of this sample are considered at higher risk.

The Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977) was measured to assess depressive symptomatology in participants, with an overall mean of 31.7 (*N* = 13; *SD* = 12.2: range from 10-48). Participants with a score of 16 or higher meet the criteria for clinical depression and a score greater than 21 indicates severe depression (Radloff, 1977). Based on these benchmarks, this sample is considered to be at higher risk for severe depression, with 12 (*N=13, 92%)* participants having a baseline CESD score over 16 and 10 (*N=13,* 83%) participants having a baseline score over 21; this level of depression is higher than comparable studies with high risk adults at risk for moderate depression (Lovibond, S. H. & Lovibond, 1995; Mohammadzadeh et al. 2019; see Table 1)

The Cognitive Emotion Regulation Questionnaire Short Form (CERQ-SF; Garnefski & Kraaij, 2006) was measured to assess the cognitive strategies used by individuals during the experience of stressful life events. Overall, the individual subscales have means ranging from 4.5 to 7.4 and standard deviations ranging from 1.9 to 3.1 (*N* = 13). Based on these data, patterns of coping strategies in the present sample are different from comparable studies with high risk adults (Mohammadzadeh et al. 2019; see Table 2). While the study sample saw a greater overall use of all CERQ-SF subscales than the study conducted by Mohammadzadeh et al (2019), with the exception of Positive Refocusing and Blaming Others, both studies saw the highest uses of Rumination and Positive Reappraisal. See the complete list of means and standard deviations of subscales on Table 1.

Correlations. Bidirectional Pearson Correlations were used to test Hypothesis 1 to note the relationship between ACEs and the CESD. Results indicate that the total ACEs score was significantly associated with the CESD among the total sample ($r = .618$, $p < .01$). Further, there was a trend level association among those with CESD scores greater than 16 and those with more than 4 ACEs ($r = .601$, $p < .1$). These results partially confirm H1 and illustrate that there is a positive relationship between adverse childhood experiences and depressive symptoms. Refer to Table 2 for the complete results of Pearson Correlations.

Additionally there were significant correlations between the CESD and Blaming Others CERQ-SF subscale for those with CESD scores higher than 16 ($r = -.621$, $p < .01$), as well as for those with 4 or more ACEs ($r = -.680$, $p < .01$). These results illustrate that those with more childhood trauma and depression are less likely to blame others when they are upset.

PRISM Impacts on Key Variables of Interest

Pre to Post Change in CESD using t-tests. Results from the pre to post intervention changes were tested through a paired samples t-test to note the impact of PRISM on depressive symptoms. Results of the CESD indicate a significant reduction in the mean ratings of clinical depression symptoms ($t = 2.887$, $p < .05$). Further results from the CESD indicate 12 (*N=13,* 92%) participants met the criteria for clinical depression (16 > total score) at baseline, whereas 6 (*N=10,* 60%) participants met this criteria post intervention. Additionally, 10 (*N=13,* 83%) participants met the criteria for severe depression (21 > total score) at baseline and 4 (*N=10,* 31%) participants met this criteria post intervention. These results illustrate significant reductions of depressive symptoms among PRISM participants. Refer to Table 1 for the total baseline and post intervention data of the key variables of interest.

Pre to Post Change in CERQ-SF using t-tests. Results from the pre to post intervention changes were tested through a Paired Samples T-Test to note the impact of PRISM on each aspect of emotion regulation measured by the CERQ-SF. Results indicate that there were no significant changes from pre to post intervention among the CERQ-SF subscales, in contrast with H2 (paired comparisons for the 9 subscales range from $t = -1.430$ to $t = .000$, all $p > .05$). These results demonstrate no significant improvements of emotion regulation outcomes in PRISM participants. Refer to Table 1 for the total baseline and post intervention data of the key variables of interest.

Discussion

This study provides important information on the relationship between adverse childhood experiences and depressive symptomatology, as well as impacts of the mindfulness-based intervention, PRISM, in strengthening emotion regulation strategies. The results of this study demonstrate a significant correlation between ACEs and depressive symptomatology ($p < .01$). This research also presents significant reductions of clinical depression symptoms ($t = 2.887$, $p < .05$) after participation in PRISM. It is noteworthy that the risk for a diagnosis of clinical depression decreased from 92% at baseline to 60% by the end of the intervention and the risk for a diagnosis of severe depression decreased from 83% at baseline to 31% by the end of the intervention. The first hypothesis stated that there would be a positive correlation between the number of ACEs and depression. The second hypothesis stated that PRISM would lead to improved emotion regulation outcomes.

In regard to the first hypothesis, a bidirectional Pearson's Correlation was run to examine the relationship between the ACE and the CESD, and showed a significant relationship among

the total sample. These results are in line with previous findings that individuals with ACEs have a higher risk of depression (Dube et al., 2003). While the evidence from previous literature supports the findings from this result, literature also states that individuals with at least four ACEs are at a higher risk than those with no ACEs (Hughes et al., 2017). Therefore, it was predicted that among those with more than four ACEs, this correlation would be stronger. Upon running Pearson's Correlations between the ACE and CESD among the participants that experienced at least four ACEs, correlations weakened and the ACE and CESD only demonstrated a trend-level of significance ($p < .1$).

However, Pearson's Correlations also noted a significant relationship between the CESD and Blaming-Others CERQ-SF subscale among those that experienced more than four ACEs ($r = -.680$, $p < .01$), as well as those with a CESD score greater than 16 ($r = -.621$, $p < .01$) (Radloff, 1977). These results illustrate a lower likelihood of individuals with more childhood trauma and depressive symptoms to blame others when upset. While not demonstrated by the current study's results, literature notes self-blame as a predictor of higher levels of depression; this could offer explanation as to why the Blaming Others subscale had a negative relationship with the higher risk groups of the sample (Yalçınkaya-Alkar, 2017).

In regard to the second hypothesis, a Paired Samples T-Test was run to note the impact of PRISM on CERQ-SF subscales. Previous research on MBIs in high risk populations note improvements in emotion regulation skills (Cameron et al., 2018). While there were no significant improvements in emotion regulation strategies as measured by the CERQ-SF (paired comparisons for the 9 subscales range from $t = -1.430$ to $t = .000$, all $p > .05$), a significant reduction in clinical depression symptoms ($t = 2.887$, $p < .05$) was noted. Since depression and emotion regulation serve as indicators of one another, the demonstrated reduction in depressive

symptoms suggests improvements in emotion regulation, although not demonstrated by the CERQ-SF (Yalçınkaya-Alkar, 2017). Similarly, the original pilot study of PRISM noted significant reductions in depressive symptoms (Russell et al., 2019).

It is also noteworthy that the Cronbach Alpha score of the Putting into Perspective subscale changed from .36 to .87 post intervention. Perhaps this change can be attributed to participants gaining a more cohesive understanding of disengaging from stressors as a coping skill by the end of intervention, and were more consistent in answering the relevant items.

Mindfulness based interventions (MBIs) show promise for addressing the needs of people with depression. The presented reduction in depressive symptomatology may be a result of the coping skills learned through the MBI, such as improved self-awareness skills, increased self-regulation of emotions, and increased distress tolerance to stressors (Bowen et al., 2014; Breslin et al., 2002; Burke, 2009; Linehan & Wilks, 2015; Russell et al., 2019; Thompson et al., 2011).

In contrast with other MBI studies, the results did not see significant improvements in emotion regulation outcomes (Cameron et al., 2018). However, in tandem with the results of this study, other MBI studies have noted reduced depressive symptoms in related samples (Carlson et al., 2003; Gross et al., 2004; Kabat-Zinn et al., 1992; Kimbrough et al., 2009; Miller et al., 1995; Reibel et al., 2001; Speca et al., 2000). In the original PRISM pilot study, significant reductions in depressive symptoms were observed (Russel et al., 2019). Given that the sample size of this study was small, the trend level of significance could suggest eventual significance such that perhaps with a larger sample, this result would have been significant.

PRISM has some strengths that helped reach these results. The intervention's use of mindfulness skill building let participants learn sustainable techniques to use during sessions and post intervention during distressing experiences. Having a group setting promoted a sense of

community and unity through the duration of PRISM. The weekly dose of two-hour sessions presented a reasonable time commitment for participants. The cohesive structure of PRISM in addition to being led by a consistent, skilled facilitator, contributed to the successes seen in this study.

PRISM has some limitations, as in any study. As a short-term intervention of four weeks, a long-term follow up may be needed to see the lasting impacts. Attrition rates were very low, but worth noting; the two participants who did not complete the full PRISM series were referred out of the program for medical needs. Generalizability is limited due to the small sample size of this pilot effort; future waves for PRISM at the Cornerstone Foundation are needed to build a more robust and representative data set.

Implications

The low attrition rates in this study are desirable and may be attributed to the environment formed by the structured design and dosage of the intervention, as well as being led by a consistent, enthusiastic facilitator; these characteristics should be replicated in future intervention efforts. To offer more generalizable results of PRISM, future efforts should aim to have larger, more representative samples. To examine long term results of PRISM, it is warranted that future efforts also conduct follow-up testing.

Conclusion

The results of this study demonstrate the strong relationship between ACEs and depression. It is warranted that early intervention take place for individuals who have adverse childhood experiences so that the risk of experiencing related deleterious outcomes is decreased. These results also highlight the benefits of offering mental health support at homeless shelters. Overall, PRISM saw improvements in depressive symptoms among participants. PRISM offered

an outlet for individuals at the Cornerstone Foundation to learn and practice emotion regulation techniques that otherwise may not have been available. It is thus warranted that more mindfulness-based practices are implemented at places of vulnerable populations to offer the learning of these helpful skills.

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Table 1

Sample Characteristics and Key Variables

Demographic Variables	Cornerstone (n=13)		Mohammadzadeh et al (2019) (n=310)	
	Mean	(*SD*)	Mean	(*SD*)
Age (n=12)	51.58	(15.39)	34.96	(9.6)
	n	*%*	*n*	*%*
Gender				
Male	7	54%	310	100%
Female				
Ethnicity				
White Caucasian	10	76.9%		
Black/African American	3	23%		
Non-Hispanic (n=11)	11	100%		
Healthcare Access				
Yes	13	100%		
Food Insecure				
Yes	10	77%		
Housing Insecure				
Yes	11	85%		

Key Variables	∝ (Baseline)	Baseline Mean (*SD*)		Post Intervention Mean (*SD*)		Mean (DASS)	(*SD*)	∝
ACE (n=13)	0.92	7.9	(5.3)	n/a				
CESD (n=13)	0.88	31.7	(12.2)	20.2	(13.4)	19.3	(4.9)	0.91
CERQ-SF (n=13)								
Self-blame	0.85	7.1	(2.6)	6.6	(2.5)	5.4	(2.3)	0.73
Acceptance	0.65	6.7	(2.7)	10.3	(9.2)	5.9	(2.2)	0.79
Rumination.	0.87	7.2	(2.6)	7.6	(1.9)	6.0	(2.1)	0.73
Positive refocusing	0.91	5.2	(2.5)	5.2	(2.2)	5.8	(2.1)	0.79
Refocus on planning	0.68	7.4	(2.6)	7.8	(1.7)	5.9	(2.2)	0.79
Positive reappraisal	0.76	7.2	(2.4)	7.8	(1.8)	5.3	(2.1)	0.79
Putting into perspective	0.36	6.2	(1.9)	6.5	(2.1)	5.8	(2.1)	0.73
Catastrophizing	0.96	7.0	(3.1)	6.5	(3.0)	5.2	(2.0)	0.73
Blaming others	0.78	4.5	(1.9)	5.1	(2.2)	5.2	(2.1)	0.73

	Baseline		Post Intervention (n = 10)	
	n	*%*	*n*	*%*
ACE (4+)	10	83%	n/a	
Clinical CESD (>16)	12	92%	6	60%
Severe CESD (>21)	10	83%	4	31%

Table 2

Pearson Bivariate Correlations

Measure	ACE	CESD	Self-blame	Acceptance	Rumination	Positive refocusing	Refocus on planning	Positive reappraisal	Putting into perspective	Catastrophizing	Blaming others
Baseline Overall Sample (N=13)											
ACE											
CESD	.618*										
Self-blame	-.011	.071									
Acceptance	.289	.220	.770**								
Rumination	-.005	-.085	.922**	.708**							
Positive refocusing.	-.125	-.331	.497+	.333	.370						
Refocus on planning	-.004	-.476	.637*	.622*	.774**	.422					
Positive reappraisal	.093	-.193	.745**	.856**	.816**	.406	.892**				
Putting into perspective	-.161	-.305	.689**	.499+	.724**	.674*	.639*	.722**			
Catastrophizing	.224	.176	.758**	.741**	.825**	.193	.538+	.716**	.636*		
Blaming others	.012	-.269	.078	.265	.174	-.053	.345	.361	.365	.401	
Above CESD Cutoff (>16) (N=12)											
ACE											
CESD	.527+										
Self-blame	.137	.312									
Acceptance	.282	.212	.847**								
Rumination	.141	.113	.912**	.779**							
Positive refocusing.	.140	-.260	.394	.469	.232						
Refocus on planning	.132	-.389	.596*	.680*	.749**	.315					
Positive reappraisal	.147	-.162	.757**	.872**	.832**	.427	.907**				
Putting into perspective	-.600	-.194	.659*	.543+	.697*	.658*	.606*	.725**			
Catastrophizing	.204	.148	.842**	.739**	.911**	.310	.599*	.734**	.693*		
Blaming others	-.017	-.621*	.244	.256	.351	.245	.535	.443	.540+	.398	
4+ ACES (N=10)											
ACE											
CESD	.601+										
Self-blame	-.162	.292									
Acceptance	-.077	.232	.841**								
Rumination	-.167	.122	.915**	.735*							
Positive refocusing.	.140	-.086	.401	.528	.250						
Refocus on planning	-.245	-.435	.576+	.598+	.705*	.384					
Positive reappraisal	-.216	-.134	.780**	.857**	.811**	.520	.873**				
Putting into perspective	-.235	-.201	.659*	.536	.694*	.677*	.610+	.753*			
Catastrophizing	.186	.143	.831**	.665*	.898**	.338	.501	.681*	.705*		
Blaming others	-.629+	-.680*	.171	.078	.228	.302	.389	.263	.527	.275	

Note. +$p < .1$ (2-tailed), *$p < .05$ (2-tailed), ** $p < .01$ (2-tailed)